

AMENDMENTS TO THE CLAIMS

Claim 1. (Currently Amended) A method for ~~pathogen~~ detection for and measurement of a targeted biological sample, comprising the steps of:

providing a multiplicity of optically encoded microbeads,

providing said microbeads with a capture ligand,

providing said microbeads with bioagent-specific antibodies,

containing said optically encoded microbeads,

adding a sample to said contained microbeads, said sample possibly containing ~~said~~ the targeted biological sample,

placing said contained microbeads and said sample in a mixing holder for sufficient time for ~~said~~ the targeted biological sample to adequately bind said microbeads,

adding fluorescent labeled antibodies to said contained microbeads and said sample for attachment to said bioagent-specific antibodies,

attaching at least some of said microbeads to a disposable capture substrate containing an array of attachment sites for attaching said microbeads thereto,

washing said substrate and attached microbeads,

inserting said substrate into an optical detection system, and

optically decoding said microbeads for ~~identification~~ detection and measurement of ~~said~~ the targeted biological sample.

Claim 2. (Previously Amended) The method of Claim 1, wherein said step of containing said microbeads is carried out by placing said microbeads in a cuvet.

Claim 3. (Previously amended) The method of Claim 1, additionally including the step of vibrating said mixing holder during said time said contained microbeads are placed therein.

Claim 4. (Previously Amended) The method of Claim 1 additionally including the step of designing each of said array of attachment sites on a dipstick to capture a single microbead.

Claim 5. (Previously Amended) The method of Claim 1, additionally including the step of locating said patterned array of attachment sites on said substrate at a spatial distance between each said array as determined by a resolution of said optical detection system.

Claim 6. (Previously Amended) The method of Claim 1, wherein said step of washing said substrate is carried out to improve the sensitivity of the detection process by removing from the substrate surface all unbound biological constituents and reducing the background solution fluorescence.

Claim 7. (Previously Amended) The method of Claim 1, wherein said step of containing said microbeads is carried out by placing said microbeads in a disposable bead pack.

Claim 8. (Currently Amended) The method of Claim 1, additionally including the step steps of providing each said microbead with a different color and providing each said microbead with containing a substrate capture point and an assay.

Claim 9. (Cancelled)

Claims 10 - 35. (Withdrawn)

Claim 36. (Previously Amended) The method of Claim 1, additionally including the step of providing said contained microbeads from the group consisting of optically encoded microbeads, charged microbeads, and microbeads with optically encoded shells.

Claim 37. (Previously Amended) The method of Claim 1, wherein said step of attaching said microbeads is carried out in an ordered array.

Claim 38. (Previously Amended) The method of Claim 1, wherein wherein said step of attaching said microbeads is carried out in a disordered array.

Claim 39. (Previously Amended) The method of Claim 1, wherein said step of attaching said microbeads to a disposable capture substrate is carried out by providing said substrate with a plurality of wells or an array of channels.

Claim 40. (Previously Amended) The method of Claim 1, wherein said step of attaching said microbeads is carried out by an array of magnetic or electrode capture pads.

Claim 41. (Currently Amended) A method for ~~pathogen~~ detection ~~for and~~ measurement of biological molecules, comprising the steps of:

providing a quantity of optically encoded microbeads,  
adding a capture ligand to said microbeads,  
adding bioagent-specific antibodies to said microbeads,  
containing said microbeads,  
adding a sample to said contained microbeads, said sample possibly containing ~~said~~ the biological molecules,  
adding fluorescent labeled antibodies for attachment to said bioagent specific antibodies,  
providing a disposable capture substrate containing an array of attachment sites for attaching said microbeads thereto,  
inserting said disposable capture substrate containing an array of attachment sites into said contained microbeads for capturing said microbeads,  
washing said substrate and said microbeads,  
inserting said disposable capture substrate into a detection system, and

optically decoding said microbeads for identification and measurement of  
said the biological molecules attached to said microbeads.

Claim 42. (Previously Amended) The method of Claim 41, additionally including the step of forming said contained microbeads to be optically encoded.

Claim 43. (Previously Amended) The method of Claim 42, wherein said step of decoding of said microbeads is carried out in an optical detecting system.